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PROCEEDINGS
OF THE
AMERICAN SOCIETY OF MICROSCOPISTS.

MINUTES OF THE ELEVENTH ANNUAL MEETING.

The eleventh Annual Meeting was held in Columbus, Ohio, August 21st, 22d, 23d, and 24th.

The Society was called to order at 10 A. M., August 21st, by the President, David S. Kellicott, of Buffalo, N. Y., in Wirthwein's Hall.* The President then spoke as follows:

"It gives me pleasure to meet you again, assembled for another reunion, for an exchange of ideas and for the purpose of presenting and discussing questions that shall advance the cause of science. It is gratifying to have the assurance of your support by your presence and by your promised memoirs and demonstrations. These make possible a meeting full of interest and necessarily full of work. Therefore, gentlemen, at the outset permit me to urge the strictest attention to the business of the sessions; it is this that brings us together. Let me urge that the discussions be free, courteous, and pointed; let every friend of the society be jealous, every instant, of its reputation, and always conscious that by our work and spirit we are known and judged.

"My earnest wish is that this annual meeting may prove as delightful and profitable as any which have preceded it; that it may result in fresh enthusiasm, which shall stimulate us as a society to do more advanced work than ever before.

"On receiving the office of President at Pittsburgh I assured you of my appreciation of your kindness in the honor you had done me. I wish at this time, to renew that expression; and when about to begin the most

* In the absence of the Secretary on account of illness, the Treasurer, Dr. S. M. Mosgrove, was delegated to take the minutes.

important and practical duties of the office, to ask your kindly assistance in the discharge of the same."

Upon recommendation of the Executive Committee, the following persons were elected to membership :

BERING, J. EDWARD, Decatur, Ill.
HOOVER, THOMAS C., M.D., Columbus, Ohio.
JAMESON, CHARLES E., Columbus, Ohio.
LATHAM, MISS VIDA A., B.Sc., F.R.M.S., Ann Arbor, Mich.
LAWTON, EDWARD P., P. O. Box 27, Troy, N. Y.
LIBBY, WILLIAM, JR., D.Sc., Princeton, N. J.
PEARSON, LEONARD, B.S., Ithaca, N. Y.
SHEARER, JAMES B., Bay City, Mich.
WHITNEY, WILLIS R., No. 6 Broadhead Ave., Jamestown, N. Y.

Acting upon the recommendations of the Executive Committee it was ordered that those persons who were three years in arrear for dues should be dropped as members.

The first exercise upon the regular programme was a paper by Dr. H. J. Detmers of Columbus, Ohio, upon *What I saw in the Optical Establishments of Germany*.

In the discussion which followed, Dr. William H. Seaman commended the new stand made by Zeiss, upon which is an excellent mechanical stage. But the stand and the accessories cost \$1100, hence the expense was fully as great as for those of the best American make.

Dr. Detmers compared his stand, made by W. H. Bulloch of Chicago, which cost, for the stand without objectives and oculars, but with other necessary accessories, \$140, and claimed superiority for it.

There being no other paper on the programme for the morning session the President called for any remarks upon items of interest or of business.

Dr. Seaman inquired about killing infusoria with chloral hydrate, in preparation for mounting. The President said he killed them with heat and with iodine. Had used alcohol successfully.

Miss Latham had found that these low forms of animals could be killed with the tentacles expanded by the gradual addition of alcohol to the fluid. Before taking her seat she spoke of the advantage to be gained by two or three members interested in the same kind of work associating themselves together for the purpose of mutual help and encouragement. She had found this useful in England, and had recently received letters from that country asking about the matter in the United States.

Dr. Seaman spoke of the advantages gained by this kind of work, and advocated plans for it.

The President had long hoped that this Society would be able to publish a quarterly journal in which should appear a summary especially of American work, and thus open up a means of communication between workers in various specialties wherever resident in the country.

Dr. Detmers said it was well known he had long advocated the establishment of such a journal by the Society, and moved that a committee be appointed to consist of three or five members to report upon the feasibility of such publication. This, according to usage, was referred to the executive committee.

Returning to the discussion of the topic of association in work, Prof. T. B. Stowell spoke in hearty favor of the idea, and cited instances where he himself had wished for such aid.

Adjourned to 2 P. M.

TUESDAY, P. M., August 21, 1888.

Upon assembling at 2 o'clock in the afternoon Professor T. B. Stowell, of Cortland, N. Y., read a paper upon *The Soft Palate in the Domestic Cat*.

Mr. C. C. Mellor of Pittsburgh, Pa., then exhibited an old microscope brought to America in 1804, and probably made about 1740.

Mr. Durkee, dairy and food commissioner for the State of Ohio, was then presented to the Society, and spoke especially of the cases of poisoning by the use of cheese in Champaign and Medina Counties, Ohio, hoping that the members of the Society might be able to aid in the investigation of these important though now mysterious subjects.

Prof. H. A. Weber of Columbus, announced that he had examined the cheese to which the recent cases of poisoning had been attributed, and failed to find tyrotox. But this poison is an evanescent organic compound and might have been formerly present in the cheese.

The propriety of appointing a committee to investigate dairy products and other foods was discussed and referred to the executive committee for recommendations.

The Society now retired to a room where Dr. L. D. McIntosh of Chicago, exhibited his projection lantern with microscope attachment. Among other things a series of slides prepared by C. C. Mellor, illustrating Infusoria, were greatly enjoyed by the audience.

Adjourned to 8 P. M.

EVENING SESSION, August 21, 1888.

At 8 o'clock P. M. a large audience was called together by Dr. H. J. Detmers of Columbus, President of the Ohio State Microscopical Society, and a Vice-President of the American Society. After a highly appreciated bass solo excellently rendered by Mr. Fred Krumm of Columbus, accompanied upon the piano by Miss Clara Blesch, and an enjoyable zither solo by Mrs. H. A. Weber, Phillip H. Bruck, mayor of the city, delivered an eloquent and complimentary address of welcome.

(The Secretary regrets that, owing to his absence, he is not able to report, even in substance, this address, gratifying as it was to the members present. Subsequent correspondence has failed to secure it.)

In response President Kellicott replied :

"In behalf of the Society I most heartily thank you for these kind and generous words of welcome. The words of our response may be few, but our gratefulness is not thus limited. There is a depth and sincerity in an Ohioan's welcome that gives us assurance and makes us feel at ease from the first. Indeed, we are not strangers to this great State, the home or birthplace of so many statesmen, soldiers, scientists, and educators. If I am correctly informed this is a State that fosters education and science in an extraordinary way. I have never believed that there was a university at every cross-roads, with few exceptions, still there are doubtless a great many. I have heard those who should know better speak lightly or derisively of this peculiarity of Ohio. It seems they have not connected this condition, as they should have done, with this fact, that if every nation under heaven wanted generals for their armies and statesmen for their rulers Ohio would have eligible candidates and enough left over to care for the commonwealth.

"We have been most cordially received in this beautiful and capital university city, and moreover, we see on every hand the most admirable arrangements for our comfort and the convenience of our work. We have gathered here from all quarters of the land, full of enthusiasm and burdened with facts to be laid before one another, discussed, and tested. Our first purpose is mutual benefit and the progress of science ; second, to enjoy a reunion with kindred spirits, joined by devotion to the king of optical instruments of investigation. Therefore, you may expect us not to be backward in coming forward to take advantage of the privileges you have so fully offered. By the way, scientific men are reputed to be modest and retiring ; they have doubtless earned the distinction ; still, for one, I have never noticed any marked diffidence when inducements were held out to them. I therefore predict that for the few days they remain here, these, my comrades, will be found to act entirely as at home, as true Ohioans, devoted to the affairs in hand, and thoroughly enjoying themselves ; and may it prove true that some pleasure and benefit result to you all who have taken so much pains to entertain us.

"I again most heartily thank you and those you represent for your welcome and many kindnesses.

"I take this opportunity to say that it is the wish of all members of the Society that all who are interested in our work shall attend the sessions and take part with us as opportunities are presented."

Prof. Kellicott then proceeded to deliver the President's annual address upon *The Nature of Protozoa and Lessons*

of these *Simplest Animals*, which was listened to with much interest and commended as an exceedingly valuable part of the Society's proceedings. A vote of thanks was passed for the paper.

Adjourned.

WEDNESDAY, A. M., August 22, 1888.

The Society was called to order at 10 A. M., President Kellicott in the chair.

Upon recommendation of the Executive Committee the following were elected to membership:

CAMPBELL, CHARLES, M.D., Green Springs, Ohio.

ELLIS, D. P., Springborough, Warren Co., Ohio.

The President then announced the appointment of committees as follows:

On a periodical publication, W. H. Seaman, T. B. Stowell, George E. Fell.

On poisonous meats and dairy products, H. J. Detmers, T. J. Burrill, H. A. Weber.

Dr. M. Cassat offered for free distribution several kinds of material obtained from the United States Fish Commission. After various announcements concerning the meeting for the afternoon at the State University, the soir  e, etc., the Society listened to the reading of papers.

The first paper presented was upon *The Form and Size of the Red Blood Corpuscles of the Adult and Larval Lamprey Eels of Cayuga Lake*, by Simon H. Gage of Ithaca, N. Y. In the absence of the author it was read by Thomas B. Stowell.

D. S. Kellicott then read: *A Partial List of the Rotifera of Shiawassee River at Corunna, Michigan*, after which Dr. F. L. James presented *A Method of Making a Colorless Solution of Copal*. At the conclusion of this paper Dr. W. H. Seaman inquired what kind of copal had been used, and remarked that Zanzibar copal was the best. Dr. James

said that he had procured that used by him from the dealer without specification as to the kind, but that care was taken to select the finest, cleanest lumps.

Dry Mounts, was the title of a paper read by William H. Seaman, in which he described the use of the "Pierce" cell for dry mounts without cover-glass. The paper was discussed by George E. Fell, Thomas Taylor, F. L. James, H. J. Detmers, and W. R. Reynolds, in which it was brought out that shellac cement was usually used for fastening such things to the glass slips, though marine glue and white zinc cement were found satisfactory. In making the shellac cement Dr. James adds kerosene or benzole to the alcoholic solution of the unbleached gum, which upon allowing to rest some days divides into two distinct layers, from which he siphons off the clear layer for use. Objections being raised to the wrinkled base for the cell as shown, Dr. Seaman said that soft metal, like copper, could easily be pressed smooth, but that with hard metal such as the brass in those at hand it was less easy, but it is cheaper and keeps its color better. He recently had some cells gilded, and in that case the soft metal was better. Dr. James mentioned that a gold-colored varnish existed which might serve equally as well as this expensive gilding.

A paper upon *The Development and Supposed New Method of Reproduction of the Sun Animalcule, Actinosphaerium Eichhornii*, by J. M. Stedman of Ithaca, N. Y., was read by Charles C. Mellor. In the discussion that followed, the President remarked that he was glad to have company in the study of the protozoa, and commended the paper just read. He had no doubt but that true conjugation occurred among these animals. Dr. A. M. Bleile read a paper by Chevalier Q. Jackson of Pittsburgh, Pa., upon *The Bacillus of Leprosy*, after which Dr. George E. Fell presented *The Examination of Legal Documents with the Microscope*. The President, in the discussion, said that Dr. Fell had sub-

mitted the documents spoken of to him without previous consultation of any kind except the direction to "use sky light," and that though neither of them claimed, to be experts in the examination of hand writing, their results entirely agreed. T. B. Stowell remarked that he accomplished more in this matter with low than with high magnification.

Adjourned to meet at 2 P. M. at the Ohio State University.

WEDNESDAY, P. M., August 22, 1888.

The Society, pursuant to adjournment, met in the afternoon in the physical laboratory of the Ohio State University, whereupon President Scott of the University was introduced, and addressed the Society as follows :

"Mr. President and Members of the American Society of Microscopists :

"It affords me great pleasure to bid you welcome to the Ohio State University. I regret that the University is not now in session, that the faculty and the students might unite in extending to you our hospitalities, and in enjoying the benefits of your discussions ; but I assure you we appreciate the honor of your visit, and that the greetings by the small remnant that is present is both cordial and sincere.

"The University is still young. It had its origin in the congressional land grant of 1862. Eighteen years ago the ground where you now sit was cultivated as a farm. It was only fifteen years ago that the doors of the institution were opened for the reception of students. It began as a school of science. Its professorships were professorships of science. Its equipment was made to grow in the direction of science. For several years its policy was distinctly that of a school of technology. But gradually the scope of the work was enlarged. Chairs of literature, history, political science, and philosophy, were established. During all this time, however, our scientific work has been constantly strengthened.

"Our past, as you see, is short, and, with all its success, is meager. But we are full of hope. Our eye is bent on the future, which, we trust, will be fruitful of worthy results.

"As I look around me, here or elsewhere, I often think of the wish that Franklin is said to have expressed some years before he died. He said he should like to reserve the rest of his life for a hundred years, and come back at the end of a century to see the progress which the world

had made. He died in 1790. If, therefore, his wish had been granted, he would be living now. Is it not probable that he would be a member of the American Society of Microscopists? Is it not possible that he would be present here to-day? That he should have expressed such a wish indicates that he had large expectations for the century. It is little to say that if he could return, according to his desire, he would not be disappointed. Great as his anticipations were, they have been far surpassed. He would be surprised — amazed. He was a patriot, and gave the best years of his life to the service of his country. He had faith in her future. But he never dreamed of such an extension of territory, of such a growth of population, of such an increase of wealth, as we and our fathers have beheld. His practical mind did much to improve the means of life, and nothing was of greater interest to him than inventions which contributed to the general welfare. The Franklin stove and the lightning-rod are familiar examples of his own contributions to this end. But who can express the astonishment and delight with which he would look around him upon what have become the common conveniences of life. Of his first trip from Boston to New York he says: ‘By favor of a good wind I found myself in three days at New York, nearly 300 miles from my home.’ Now the trip is made in six hours. On his return from Philadelphia to Boston he says: ‘We arrived safe and sound at Boston after about a fortnight’s passage.’ Now the journey can be made in nine hours. His first voyage from England to America occupied two months and eighteen days. Now it is made in less than a week. As the first postmaster-general he organized the mail service of the country. What would he think of its magnitude and rapidity to-day? He proved the identity of lightning and electricity, and made the first practical application of the fact. What would he say of the telephone, the telegraph, the electric light, the electric motor?

“But of all the wonders that would greet the return of our first apostle of science, none, I think, would cause him greater surprise or afford him greater satisfaction than the microscope. The microscope of Franklin’s day was a simple instrument of limited power. Some good scientific work was done with it; but all recent attempts to correct its defects and increase its power had been abortive, and for many years after his death it was supposed that these defects were inherent and could not be cured. The history of the microscope during the last seventy years is a sublime record of the triumph of human patience and skill. Its mechanism, studied in the light of its history, is a marvel second only to those which it reveals.

“Of its service to mankind I need not speak in this presence. What

it has done, what it is doing, what it is destined to do, is known to you to be of incalculable benefit and promise to the world. Without it scientific investigation would be shut out from many of its most important and interesting fields. It has not only rewarded investigation, but it has stimulated it. It has awakened and developed the scientific spirit. It has touched a thousand brains with the ambition of research. It has filled a thousand breasts with the enthusiasm of discovery.

"Who can look through a microscope without suggestions of the immeasurable Beyond — of the swarming universe of delicacy and beauty which a perfect light and a perfect eye would reveal? What agents and laws may lie there hopelessly hidden from the ken of science? Who can look downward into the microscopic world, deeper and vaster than the plummet of even the imagination can fathom, without lifting the eye of his soul to the infinite and invisible Power that has created, and the omniscient wisdom that comprehends, all that is?"

"Again, gentlemen, I welcome you to our halls, and I bid you God-speed in your happy and beneficent work."

After an appropriate response by President Kellicott, Dr. H. J. Detmers of Columbus, Ohio, presented his subject: *Photomicrography with High Powers by Lamplight*.

The doctor displayed his apparatus and explained the manner of using it, illustrating the entire work by making a negative of a test diatom with a Tolles $\frac{1}{8}$ inch homogeneous immersion objective and Huyghenian eye-piece. With the assistance of Prof. Thomas, of the University he also exhibited a series of excellent lantern slides made from negatives taken in the same manner. The showing thus made of *Amphipleura pellucida* was universally commended as equaling if not surpassing the best work of the kind.

Thomas Taylor showed and explained colored slides of crystals of butter and other fats, which were also much admired.

The Society was then invited to a collation furnished by the ladies of the local Society, and for once every member felt specially interested in the programme, and everyone was ready to bear a full part in the exercises. There were expressions heard upon all sides complimentary to the ladies and their thoughtful contribution to the pleasure of the session.

The evening was spent by the members at the hotel in a social manner, and in conference with one another.

THURSDAY, A. M., August 23, 1888.

The Society convened at 10 A. M. and was called to order by the President.

Upon the recommendation of the executive committee the following persons were elected to membership: D. P. Campbell, M.D., Green Springs, Ohio; Charles Ellis, Springborough, Warren County, Ohio; James Bull, M.D., Hanging Rock, Ohio.

Upon similar recommendation of the executive committee By-law No. 5 was changed so as to read that there shall be 600 instead of 500 copies of the Transactions published, and the distribution of volumes to non-members was referred to the committee on publication for next year.

Dr. William J. Lewis reported on subscriptions to the Spencer-Tolles fund as follows:

St. Louis Medical and Surgical Journal,	-	-	-	\$10.00
C. C. Mellor, Pittsburgh, Pa.,	-	-	-	10.00
J. M. Smith, New York City,	-	-	-	10.00
Lester Curtis, Chicago, Ill.,	-	-	-	10.00
C. M. Vorce, Cleveland, Ohio,	-	-	-	10.00
William J. Lewis, Hartford, Conn.,	-	-	-	10.00
S. W. Dennis, San Francisco, Cal.,	-	-	-	5.00

The committee on nominations was elected with H. J. Detmers, chairman.

While the tellers were counting the ballots for the nominating committee, a resolution was passed requesting the executive committee to locate, if practicable, the next meeting in Buffalo, N. Y.

A paper by Dr. Thomas Taylor was then read, upon *The Cellular Structure of the Black Pepper Berry*. This was illustrated by carefully prepared colored drawings which were exhibited to the members.

Next followed a paper by T. J. Burrill upon *The Ustilagineæ or Smuts, with a List of Illinois Species*.

The abstract was presented orally, accompanied with

illustrations upon the blackboard. Discussed by Drs. Seaman and Hudson.

Mr. E. H. Sargent read a paper entitled *The Muscular Coats of the Esophagus of the Domesticated Animals*, contributed by Leonard Pearson, after which the Society adjourned.

AFTERNOON SESSION, August 23, 1888.

The Society was called to order at 2 P. M. by President Kellicott, who called upon Dr. Thomas Taylor for his paper upon *An Oleomargariscope; a Hand Polariscope for Detecting Fats*. The instrument was exhibited and the method of using it explained.

The following papers were then read by title at the request of the authors and referred to the committee on publications: *A New Adjustment for the Microscope*, by E. H. Griffith, and by the same author *A New form of Photomicrographic Camera*. *Observations on Fresh-water Infusoria*, by D. S. Kellicott. *On The Radiation of Heat Between Metals by Induction and Conduction, with Numerical Results for Brass and Steel*, by W. A. Rogers.

The Society now entered upon the affairs of the working session held in the same room, and for which special preparations had been made.

At the tables distributed around the room near the windows practical demonstrations were made, of which the principal ones were mainly as follows :

Mr. and Mrs. C. Wellington. Mounting blood corpuscles in glycerine without a cell, and general work.

Dr. F. L. James. General mounting.

Henry Mills, preparing and mounting sponges.

Miss M. A. Booth. Staining and mounting pollen.

Dr. R. N. Reynolds. Cutting sections and mounting in balsam.

While the work at the tables was in progress those not at the time engaged or attending the demonstrations, listened to

several practical talks from members of the Society. The secretary was not able to record all of these, but the following brief notes illustrate the proceedings :

Henry Mills of Buffalo, spoke of finding, collecting, and preserving fresh-water sponges, and gave some account of them as interesting objects for microscopists. They should usually be looked for in still ponds rather than in swift-running streams, and attached to submerged sticks, logs, stones, etc., but especially to aquatic weeds. It is useless to search for them after freshets. They often present the appearance of transparent or brownish jelly, but are sometimes of the consistence of commercial sponge. One is green and this does inhabit swift-running water. As may be well seen in the winter eggs the spicules seem to precede in growth the sarcode, but with high powers a coating of amœba-like jelly can be seen. One species had been found forty feet below low water mark. *Spongilla plumosa* had been discovered forty years ago in Bombay. Dr. Palmer four years ago found in Mexico (?) what he at first took to be birds' nests hanging to the drooping branches of trees which had been six weeks under water from an overflow. The bunches were found to consist of this same sponge, though not a familiar one in this country. An interesting case was recited, showing that these sponges are worthy of examination from a practical standpoint. Some workmen near Indianapolis, engaged upon ground from which a pond had been recently drained, were afflicted with a troublesome skin disease, which was traced to the irritating effect of sponge spicules, which, moving as dust in the air, penetrated the clothing and caused the trouble. He had tried some of the dust and found it exceedingly irritating to the skin.

Prof. Lozenby spoke of the experiments of Prof. Barnes, going to show that needle-shaped crystals in some plants constitute the acrid property of the same.

The application of electricity to microscopy was discussed by Dr. William J. Lewis and Dr. L. D. McIntosh. The former said the best lamp for this purpose is a modification of the ordinary incandescent one, with the bulb sealed below, so as to make the glass above even in thickness and contour, to avoid improper refractions. For those who have the electric light in their house and can take the current direct it is an excellent method of illumination, but for those who are obliged to have a complete equipment of battery and the accompaniments the complications are too great for ordinary work, and the light too unmanageable for the ordinary microscopist.

Dr. L. D. McIntosh, upon the same subject, said that some two years ago Mr. Durke of Chicago, brought drawings to him (McIntosh) desiring

made an attachment for using an incandescent electric lamp for microscopic illumination. This attachment he proceeded to describe (see cut). A small half-candle lamp is mounted in a brass tube which is connected with a rubber base having a "society" screw to fit into the sub-stage adapter. The connections with the battery are made through the rubber base. A tube having a blue glass in one end is used to cover the lamp, and over this a small cap is fitted, pierced with a pin-hole. With this attachment oblique light, either below or above the stage, can be easily secured by rotating the sub-stage, or mirror-bar to which the lamp is attached. Mr. Durkey sent the apparatus to the Royal Microscopical Society of London, and received therefor considerable commendation. The Doctor said he had himself used the lamps with excellent results.



Dr. William M. Seaman, continuing the discussion, said that over a year ago a member of the Washington Microscopical Society used the electric light in his work. For this purpose he attached to an Edison one to two candle-power lamp a stout copper wire which may be bent in any shape and which holds the lamp in any desired position. The battery consists of three two-quart cells—a modification of the Fuller battery, zinc in porous cup, and carbons outside packed in fragments of retort carbon. This apparatus has worked without renewal of the solution for months at a time. Of course the zinc must be lifted out when not in use, and the light is used only two or three hours at a time.

Dr. F. L. James explained the cause of the usual want of permanence of glycerine mounts, and his method of testing the shrinking of white zinc cells. The solvent of gum evaporates, and the cement mass becomes correspondingly reduced in size. When a rather fresh cell of this kind is filled with glycerine, and the glass cover put on, the sealing may be perfectly done, but after a time the shrinkage of the cement ring reduced the cell capacity and leakage occurs as a necessary consequence. The remedy is to have the cement rings thoroughly dried before using them; some months should elapse between the time of making and use. The Doctor also described his method of making white zinc cement and mounting in glycerine. He puts into the cement a few drops to the ounce of some drying oil. When ready to mount he fills the cell with glycerine from a small wash bottle, inserts the object and places the cover on one side so that in letting it down a wave of the fluid is driven before

it. If at any time an air bubble is included no time is spent in trying to remove it, but the cover is at once removed and the process tried again. A clamp is now put on and the slide is washed freely under a tap or from a wash bottle, thoroughly dried with filter paper or linen blotting paper and by subsequent exposure to the air. The slide is now put on the turn table and a single ring of cement spun around the edge of the cover. With the thoroughly shrunken cell the mount is as permanent as can be desired.

Upon the adjournment of the session preparations were made for the soiree held in the same hall during the evening. For this ample provision had been made by the local committee, and the members of the Society very generally aided by exhibiting and explaining objects mostly of their own preparation. The number of objects shown was large, and the company that thronged the hall seemed to be abundantly entertained. The lantern exhibit of Dr. McIntosh also drew an appreciative concourse of spectators. Altogether the evening was pronounced a "splendid success."

FRIDAY, A. M., August 24, 1888.

The Society was called to order at 10 A. M. by the President. Upon recommendation of the executive committee the following persons were elected to membership :

FLEXNER, SIMON, Louisville, Ky.
BLÄSCH, P. E., M.D., Columbus, Ohio.
BAUSCH, WILLIAM, Rochester, N. Y.
STEDMAN, JOHN M., Ithaca, N. Y.

Following the recommendation of same committee a report on micrometry was adopted [see p. 163], and the proposed change in the constitution in regard to making the initiation fee two, and the annual dues three dollars, was postponed another year. The committee on publications was given full authority in regard to the disposal of papers read during the meeting.

The secretary was instructed to insert in the list of mem-

bers the main specialty of each, having special reference to the work of this society, and to confine the matter in each case to one subject.

The report of the committee on Fasoldt's test plate having been called for, Dr. H. J. Detmers, as the only member of the committee present, stated that he had not seen the plate, and that no report of the committee could be made. The secretary was instructed to see that the plate was placed in Dr. Detmers' hand. Committee continued.

Dr. William J. Lewis, for the committee on constitution, reported progress, and the committee was continued.

The treasurer's report was read and adopted [see p. 164]. A proposition regarding the matter of compounding for the annual fees was postponed for the time.

The committee on nominations reported as follows:

For President, William J. Lewis of Hartford, Conn.

For Vice-Presidents, { A. M. Bleile of Columbus, Ohio,
F. L. James of St. Louis, Mo.

For Members of the Executive Committee, { F. O. Jacobs, Newark, Ohio,
C. C. Mellor, Pittsburgh, Pa.,
Wm. H. Seaman, Washington, D. C.

These members were duly elected to the offices named, after which the Society adjourned to meet in Newark, Ohio, upon the invitation of the mayor and board of aldermen of that place.

THE EXCURSION TO NEWARK.

About eleven o'clock Friday, August 24th, the members of the Society and guests invited by the local committee boarded a train upon the Baltimore & Ohio railroad for Newark, Ohio, for the ostensible purpose of inspecting the renowned prehistoric works at that place. This excursion had been planned by the members of the State Microscopical Society of Ohio, at whose expense the transportation was furnished, and was intended as a complimentary contribution

to the interest and pleasure of the meeting of the National Society. In this the fullest hopes of the projectors were abundantly realized, for the day proved to be an exceedingly enjoyable one to all. The favorable opportunity on board the cars for social intercourse and face-to-face consultations, the good-fellowship engendered and enjoyed, the attractiveness of the external world upon a beautiful summer day, the attentions and well-tested ability of those managing the excursion, all contributed to make the day memorable in the memory of the members.

If, however, the good people of Columbus were successful in their endeavors to entertain the Society, the citizens of Newark must be credited with even greater accomplishments. Arriving at the railroad depot the adjoining streets were found crowded with carriages, enough to receive the entire company and to pleasantly convey all to the county fair grounds, situated within the renowned circle, marked by the immense earth-work, of which all had heard and but few of the present company had seen. An assembly was made on the eagle-figure in the center of the enclosure, when C. B. Griffin was introduced and gave a highly eulogized address of welcome. This was as follows :

" Mr. President, and Gentlemen of this Scientific Association :

" I think it was Mark Twain who remarked that the essential qualification of a public lecturer was that the speaker should know nothing about his subject. Possessing that qualification in an eminent degree, perhaps accounts for my being put before you by my neighbors to talk briefly of the mounds and mound builders. Though somewhat ancient, I possess no family traditions connecting me with the lost race, hence I can only indulge in idle speculation. The race is lost to history and tradition, and the profoundest speculations of the archæologist are mythical at best. Their works surround you and are under your feet, but the builders, where are they? Echo answers, Where?

" The history of the world furnishes no parallel. True, history, sacred and profane, records the rise, decadence, and fall of empires, dynasties, and races, but their extinction as a race usually came through conquest, the remnant of the conquered being merged in the conquerors

by that process which Mr. Clay once denominated the inevitable law of population. But here we have around us the evidence of a race with a good degree of civilization, and the magnitude of their works indicates a teeming population as completely snuffed out as if the Destroying Angel had swept over this mighty Mississippi Valley and in one night had so completely wiped out all written traces of their history and fate that the students of psychology, cosmogony, and Spiritualism combined have thus far failed to unseal the mouldy cerements of a dead past. No robust pre-Adamic man, or stalwart antediluvian, delves in these ditches or condescends to send us a planchette message to relieve our anxiety as to their earthly fate. They doubtless were an industrious race, as we have no evidence that they imported knights of the spade from Ireland, Italy, or China to dig those ditches or raise these walls of earth. Who were they? Whence came they? Whither went they? These are questions which members of your scientific association, archæologically inclined, may with profit consider, and if successful in solving these knotty problems your meeting will not have been in vain, as you will have discovered the missing link between the present and the pre-historic period.

“The date of the advent of the North American Indian is shrouded in mystery, and yet the race of mound builders so far antedate them that they have no tradition of them. One of the most profound of their medicine men declared that these works were here before the trees began to grow. A race lost to history, sacred or profane. Were they swept from the earth by some deadly epidemic? Did some mighty convulsion of nature so change the seasons as to bring famine upon them, or did they, from scarcity of game or other causes, emigrate southwest and by blending with other unknown people become the progenitors of the Aztecs and Toltecs? If this theory should be accepted their civilization was materially modified by the mixture, as the character of their monuments differs materially from those found in the great Mississippi Valley. Our only hope is that the advancing column of science and education may find a key to unlock the Arcana. That at one time they were a mighty nation no one doubts, occupying the vast valley from the base of the Alleghanies on the east to the western border of Missouri on the west, from the lakes on the north to the southern borders of Tennessee. It would require volumes to contain a list of the termile, hence I shall only mention some of the most prominent that occur to me.

“From the fact that these earth-works abound to a greater extent here than elsewhere, it has been claimed that this was their seat of government. If this claim is well founded you stand to-day on classic ground, amid the ruins of the capital of a nation which had passed into

the sear and yellow leaf and was decaying when Nineveh, Thebes, Carnack, Baalbeck, and Herculaneum were busy marts, and the antiquarian has no occasion to become a pilgrim in a strange land in order to gratify his longing for the ancient, but may develop his muscle and give full rein to his fancy in this perhaps the first spot inhabited by men, and I shall be surprised if you who believe in the Darwinian theory do not find in some of these mounds your missing link. This beautiful valley was originally covered with circles, squares, parallelograms, roadways, octagons, etc., but being a rich soil many have been obliterated by the processes of cultivation. This one, known as the Old Fort, is perhaps the best preserved, and yet you will notice to the southeast a depression caused by the location of a public road for a short distance along its summit by the pioneers, to avoid a swamp in that direction.

"So far as known a pioneer named Isaac Staden, whose cabin in 1798 was situated east of Newark, near Montoue's Point, in search of his cattle, was the first white man to discover this fort. As you will discover, it is almost an exact circle, with eagle mound in the center, and eastern gateway. But I will not attempt to describe that which you can examine for yourselves. There are other marked enclosures in this vicinity, but your time will be more profitably spent by visiting them than by a dry description, and I can render greater service as a guide-board than in the capacity assigned me. But time will not permit you to visit the stone fort nor the south line of the county, the Alligator Mound near Granville, the Stone Mound near Smoots Lake, two miles south of Utica, nor the large mound in Homer, second only in size to the great mound in the old cemetery at Marietta. Neither will the time permit you to follow the chain of works mostly situated on elevations from the banks of Killbuck, near Wooster, through this region to Circleville, which was originally built on the site of one of these extensive circles, thence by circuitous routes to Marietta. They evidently were erected when Old Time was young, and, as speculation is cheap, allow me to suggest that possibly this was the veritable garden of Eden, inhabited originally by the man without a *mother-in-law*, but the tree of knowledge has long since fallen into decay, and as a consequence I appear before you ignorant of these gigantic works, and if by yonder entrance "Satan sat, squat like a toad, by the ear of Old Mother Eve," she probably was not the only woman betrayed within this enclosure. But, gentlemen, I will no longer detain you from a personal inspection of the works. I bid you welcome to this the most historic spot on earth."

The address finished, and a hundred questions by the visitors answered by those familiar with the place, while Mr.

Drescher arranged his camera for a picture of the group, lunch was announced. To this collation no second invitation was necessary, though it was observed that many hurried away with a sandwich in hand, to make good use of the time in inspecting the wonderful records here left by an unknown people. The secretary does not venture to describe what he saw and heard; he is not writing a book. But no one having seen this marvelous relic can fail to be profoundly impressed by this evidence of a former civilization. No other fair ground in the world can vie with that of Licking County, Ohio. It is fortunate too that the wonderful pre-historic remains are securely preserved by this use made of the grounds.

But the time was rapidly passing and a call was made to again take the carriages to visit other no less notable earth-works in the vicinity and to see something of the enterprising city and surroundings. After the thoroughly enjoyable ride the company alighted at the Tubbs House, where a magnificent banquet was served. Two long rows of tables in the spacious dining-room were filled with guests and loaded with everything the culinary art could suggest, arranged and served with excellent taste and good order.

When at length the clash of resounding dishes and glass ceased Mr. Griffin arose, and, after a few aptly chosen words, called upon Judge Hunter of Newark, who pronounced a witty and eloquent welcome in behalf of the citizens of the place, and of the city council — eulogizing the professional work of the visitors and the achievements of science. Dr. A. M. Bleile of Columbus, was then called upon for a response, which was given in the happiest vein and most appropriate wording. A call for the retiring president brought Professor Kellicott to his feet and loosened the organs of silvery speech and of wise counsel. After his pleasant review of the labors and events of the meeting, and his hopeful predictions of the future he called the Society as such to

order and asked for the report of the committee on final resolutions. Dr. Seaman of Washington responded, and orally presented resolutions of thanks, accompanied with all the graces of refined humor and sincere good will, to the Mayor of Columbus, to the Ohio State Microscopical Society, to the ladies associated with the local society, to Mr. Fred Krumm, Mrs. H. H. Weber, and Miss Clara Blesch, and finally to the citizens of Newark.

An amusing episode now occurred. Dr. H. J. Detmers arose, and with pathetic voice and manner began to bewail the fate of two microscopists who had thus far taken no part in the proceeding. After thoroughly arousing the curiosity of his audience he removed from a box a piece of workmanship executed by C. Wellington, of Michigan, and presented by him to the State Microscopical Society of Ohio. Two very large stuffed frogs were seated at a table, each having before him an imitation microscope curiously wrought, together with various accessories. The attitude of these modest workers over the tube was that of amazement at the marvels they beheld. Altogether it was an ingenious and eminently curious work of art, gaining now a laughable notoriety.

Professor Kellicott now assigned his chair to President William J. Lewis, who, having appropriately accepted his new office in fitly chosen words, called for a meeting of the new executive committee in the car on the return trip to Columbus. A vote of thanks unanimously passed for the successful and courteous efforts of the esteemed retiring president, and the Society adjourned *sine die*.

T. J. BURRILL, *Secretary*.